DIAMOND®

Propane Gas Refrigerators

"No Electricity? No Problem!"

Deluxe 13 cu ft Gas Refrigerator
Owner's Manual

Thank-you for purchasing a *Diamond* refrigerator. We designed this refrigerator especially with you, our customer, in mind. We want to assure you that this refrigerator should give you years of trouble-free service. If for some reason this refrigerator is defective, we will stand behind you with a 5 year limited warranty. Thoroughly read the Owner's Manual, and follow all instructions therein. If you have questions regarding the use and operation of your refrigerator, please contact your local dealer.

To install this product you must have:

- ☐ Level
- ☐ 13/16" fixed wrench or adjustable wrench
- ☐ 5/8" fixed wrench

After installing, make sure:

- ☐ Door handles are secure and tight (some models only)
- ☐ Door seals are sealing properly
- ☐ Refrigerator is level on sides and top
- ☐ Front grille is securely attached (some models only)
- ☐ Refrigerator is solid on all corners
- ☐ Mail pre-addressed Warranty Card

Proper Disposal of your old Refrigerator or Freezer

Risk of child entrapment

Child entrapment and suffocation are not problems of the past. Junked or abandoned refrigerators or freezers are still dangerous- even if they will sit for "just a few days". If you are getting rid of your old refrigerator or freezer, please follow the instructions below to help prevent accidents.

Proper Disposal of Refrigerators/Freezers

We strongly encourage responsible appliance recycling/disposal methods. Check with your utility company or visit www.recyclemyoldfridge.com for more information on recycling your old refrigerator.

Before you throw away your old Refrigerator/ Freezer:

- Remove Doors
- Leave Shelves in place so children may not easily climb inside.
- Have refrigerant removed by a qualified technician.

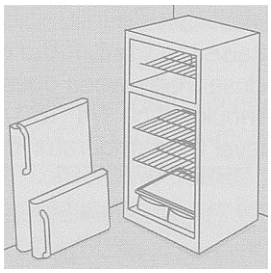


Table of Contents

Page

Cooling Unit Diagram……14
General Operation…… 6
- Adjusting Temperatures…… 6
- Operating Tips……7
- Freezing Tips……7

Lighting…… 6
- Hand Lighting…… 6

Maintenance…… 7
- Cleaning the Refrigerator……7
- Defrosting the Refrigerator…… 7

Repairs…… 8
- Cleaning the Burner……8
- Cleaning the Flue and Baffle…… 9
- Cleaning the Orifice…… 9

Refrigerator Set-up…… 4
- Gas connection…… 4
- Leak testing…… 4
- Gas Pressure……4
- Interior Light…… 4
- Leveling…… 5
- Ventilation……5

Transporting Refrigerator…… 9
Troubleshooting……12-13
Unpackaging Your Refrigerator…… 4
Warranty……9

Unpackaging your Refrigerator

To unpackage your refrigerator cut and remove all plastic strapping; remove cardboard box and edge protectors, then remove plastic bag covering refrigerator. **Caution**, keep plastic bag away from children. Dispose of, or recycle promptly. Proceed by removing packaging tape from all Styrofoam and cardboard corners, and remove refrigerator from it's cardboard/ Styrofoam base. Leave tape from doors in place until refrigerator is in it's desired spot. Now transport unpackaged refrigerator to site. Note: a padded appliance hand truck is great to move refrigerator through doors and up or down stairways. A padded appliance hand truck can be rented from most appliance retail shops.

Refrigerator Set-up

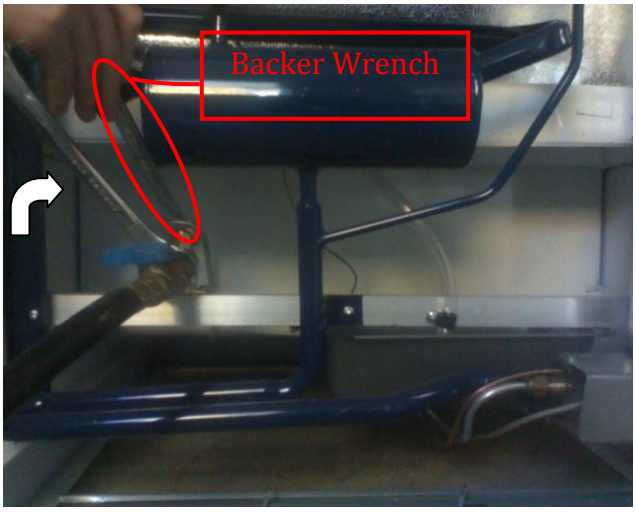
➲ A qualified person should perform all gas connections and installations.

⚠ Propane is flammable. If you smell gas, extinguish open flames; do not operate electrical switches; open windows and promptly call your gas supplier.

To set up refrigerator, please follow these instructions to their entirety.

1. **Gas Connection.**

   All *Diamond* refrigerators are equipped with a ⅜" male flare hook-up. This connection is located on the back of the refrigerator towards the bottom, left side. This fitting does not require the use of any paste, tape, or liquid sealers. Use a flex line to connect the refrigerator from the gas source that is long enough to move the refrigerator away from the wall to access the rear for service. Be careful not to over tighten the connection. The fitting needs only to be snug with a wrench. Remember to use a backer wrench



when tightening fitting. (See picture above)It is recommended that you install an ON/OFF gas valve before the flex line.

2. **Leak Testing**

   Prior to lighting your refrigerator, you must check for leaks. This is done by mixing some dish soap with water and applying the solution to all gas fittings with a toothbrush or paintbrush then turn on your gas supply. If

   leaks are present, air bubbles will appear. Should you find air bubbles, shut off gas supply and re-tighten fitting. Be careful not to overtighten the fitting. For more information, watch the Diamond Maintenance DVD

3. **Gas Pressure**

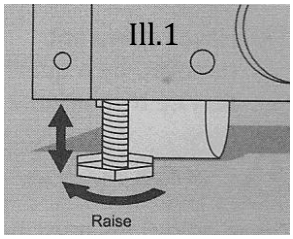
   Diamond propane refrigerators are designed to operate from an LP gas supply with a gas pressure of 11" water column. Have your gas supplier or another qualified person check this for you.

4. **Interior Light**

   Diamond refrigerators are equipped with LED interior lights. Light may or may not be used. If you wish to use the light, insert four AA or D batteries (included) into battery holder on back of refrigerator.

5. Leveling

Diamond refrigerators operate with the use of gravity. The flow rate of the liquidsis determined by the angle of the tubing in the cooling unit. It is critical that the refrigerator is level to get the correct flow for the best efficiency. To level unit, place a level on the top of the refrigerator and level the refrigerator from right to left and front to back. Turn the leveling feet clockwise to raise refrigerator. (See ill. 1)If the floor under the refrigerator is out of level, it may be needful to put shims under the leveling feet.



6. Ventilation

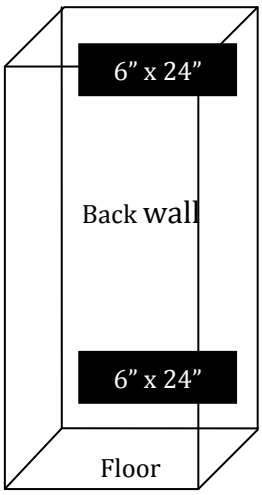
Air ventilation (circulation) is very important. Always provide ample air circulation behind and above the refrigerator. The purpose for proper air circulation is:

1.) To prevent any heat build-up resulting from the lack of ventilation.
2.) To provide ample airflow for proper refrigerator performance.
3.) To prevent any direct draft to the burner area, which may extinguish the flame.

When venting directly outside or into the attic, use a shield or baffle between flue pipe and vent pipe to prevent a direct draft from occurring. Allow no less than 6" from the top of the refrigerator to the ceiling or other obstructions. To create air circulation for better flow, see the following tips.

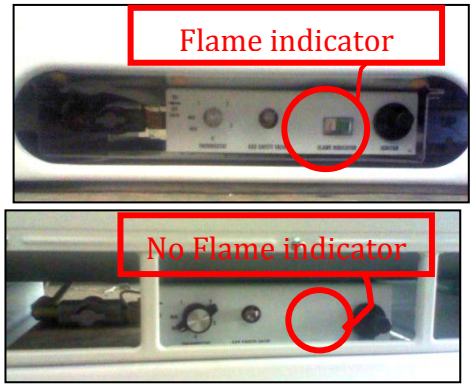
1.) A 6"x24" or equivalent hole cut in the floor or back wall with a register installed. When putting the hole in the back wall put the bottom of the hole 6" from the floor. Allowing air intake from the basement or crawl space will allow air to circulate up the back of the cooling unit. It is advisable to use a register that can be opened and closed. When possible, cut another 6"x24" or equivalent hole towards the top of the back wall to release the heat from the refrigerator to an outside area.
2.) Allow 2 inches from the back of the refrigerator to the wall additional air circulation. It is recommended that the refrigerator is installed free standing.
3.) Venting the flue pipe directly outside or into an attic or similar plumbing as a water heater requires will rid the area of most of the heat the refrigerator produces. Do not make a sealed connection between the flue and vent pipeconnection. Simply hover the vent pipe over the flue pipe allowing some air to draft in at this point to create a good airflow.
4.) If the circulation is suspected to be inadequate, roll refrigerator away from the walls and other obstructions and let it run in this position for a period of time and compare performance to the intended location. If the refrigerator compartment lowers drastically during this period while under similar circumstances of use, the air circulation in the intended location is inadequate. See ill.2

Ill.2



Lighting

After set-up of refrigerator is complete, you are ready to light the burner. Lighting the refrigerator for the first time will take longer than usual due to the air in the gas lines.
Before attempting to light the refrigerator, you will need to determine with which control style your refrigerator is equipped. The difference is if your control has a flame indicator or not.



If you have a flame indicator follow instruction A. If not, follow lighting instructions B.

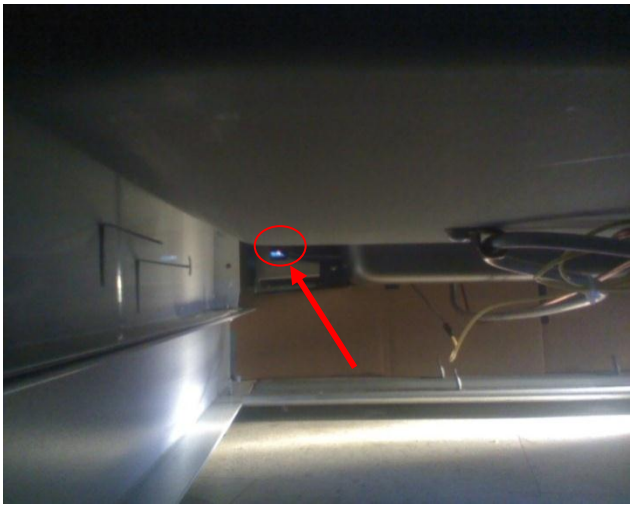
Lighting Instructions A.

1.) Remove front grill (See Picture below)
2.) Turn thermostat knob to position 3
3.) Turn **ON/ OFF** valve to "ON" position (horizontal).
4.) Press in and hold the gas safety button while pushing the ignitor button repeatedly to light the burner.Watch the red needle on the flame indicator to see if the flame is lit. When lit, the red needle will movefrom white to green.

Remove front grille

Lighting Instructions B.

1.) Remove Front grill
2.) Turn thermostat knob to position 3
3.) Turn **ON/OFF** valveto "ON" position (horizontal)
4.) Press in and hold the gas safety button while pressing the ignitor button repeatedly to light the burner. Watch through the opening to the left of the thermostat to locate the flame at the back, left side of the appliance, approximately five inches from the floor. (See picture below)



We recommend that upon initial lighting to take a picture or a good look at the flame and memorize the size and color for future reference. It is recommended that you check the color and size of the flame upon every start-up.

Hand Lighting

If for some reason the refrigerator will not light with the peizo ignition or the ignitor fails to spark, it is possible to hand light the burner. To do this you will need two people and simply use the above procedure and replace the ignitor button with a person at the burner with a lighter.

General Operation

Adjusting Temperatures

Diamond refrigerators are equipped with a thermostat that can be adjusted. To do this, turn the thermostat knob to the desired setting. Always start the refrigerator at setting "3" and let the unit cool down for at least 8-12 hours. Then place food in the refrigerator in small amounts spread out every couple of hours. If a large portion of room temperature food is placed into the refrigerator at one time, this will overload the cooling system and it may take three times longer to recover. Once you have placed the food into the refrigerator, allow the unit to stabilize at least overnight. Adjust the thermostat to a higher number if a colder temperature is desired. Warning: the colder you turn your refrigerator, the faster frost will build up on the fins.

Adjusting to the correct temperatures may take a span of a few days. Once this is achieved, then adjusting should only need to be done if the ambient temperatures (between seasons) change, or your lifestyle changes (more people using the refrigerator).

Operating Tips

All propane refrigerators are manual defrost. If the frost build-up is solid between the fins in the refrigerator, it is time to defrost. (See defrosting page 8)

Follow the tips below to keep frost levels lower.

- Check the door seals for leaks.
- Place lids on food and liquid containers before placing them in the refrigerator.
- Adjust the thermostat knob to keep food at the desired temperature. This will generallybe between settings 2 and 3. Turning the control higher, or to "MAX" will not necessarily make your fridge colder, especially if thetemperature probe is encased in ice on the fins.
- Let food cool to room temperature or colder prior to storage in refrigerator.
- Wipe condensation off cold containers with a dry towel prior to placing them into the refrigerator.
- Limit how often the door is opened, especially in hot humid weather.

Freezing Tips

For items with higher levels of sugar, such as ice cream, put these items on the bottom plate of the freezer. This is always the coldest spot in the freezer. Chill warm items before placing them into the freezer. When putting water in the freezer for freezing, make sure your water is as cold as possible and put these containers on the freezer shelf with meat and vegetables. It is advisable to use metal ice trays, because metal transfers cold better than plastic. When quick-freezing items such as water and juice, these items should be placed as far back and towards the bottom as possible.

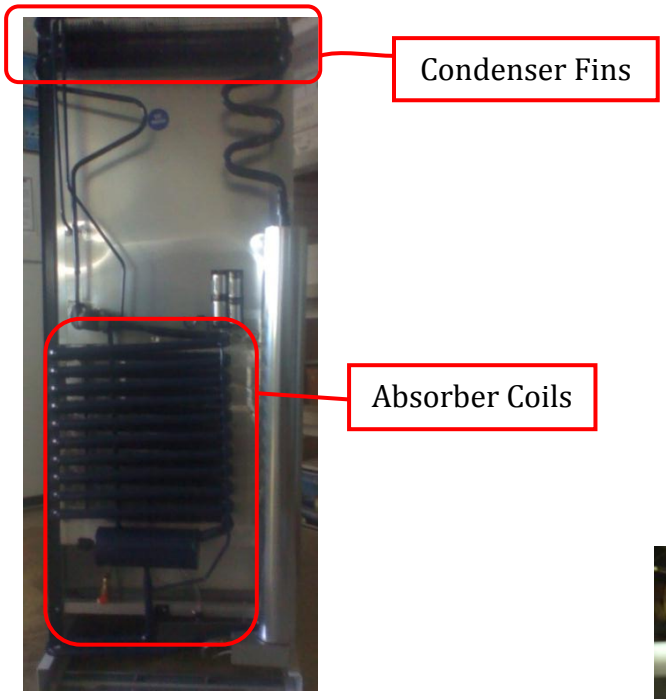
Maintenance

Cleaning the Refrigerator

Proper cleanliness of your refrigerator is important, especially the inside. A recommended and convenient time is during regular maintenance or right after defrosting. Cleaning both the inside and outside should be done with a soft cloth and mild soap and warm water solution. Do not use a harsh cleaner or a coarse cloth.

Cleaning the outside of your refrigerator requires a soft cloth and mild soap, warm water solution. Check the door seals for debris, for this can produce an unsealed surface and cold air can escape. Keeping the seals clean is especially critical to assure longer life and proper sealing, especially in the lower parts of the door. When done cleaning, you can wax the refrigerator to prevent from minor scuffs and scratches and improve the overall appearance of your refrigerator. A standard auto wax works great. Do not wax the handles, plastic, or the rubber gasket.

Cleaning the cooling unit will improve the overall efficiency. This should be done every three months. Simply use a large bristle brush and remove the lint and dust from the condenser fins and the absorber coils. (See picture below)



Keep the area around and under the refrigerator clean. If this is not done, dust and other light debris will be sucked into the burner tube. This is a common problem with refrigerator failure. This should be done every three months or more often is better. (See **Cleaning the Burner, Cleaning the Flue and Baffle,** and **Cleaning the Orifice** section for more information)

Defrosting

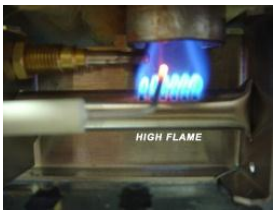
There are two ways to defrost your refrigerator: 1.) Turn the thermostat knob to setting "MIN" overnight. The next morning, turn the knob to it's original setting. Doing this weekly should be sufficient to keep the ice off the fins. **Remember, you must turn thermostat knob to it's original setting or refrigerator will not cool properly!** 2.) Once ice build-up is solid between fins, turn off refrigerator, and allow ice to thaw, and then remove the ice by hand. You can use a plastic scraper to remove the larger chunks. Do not use an ice pick or metal scraper. The drain pan is not designed to hold the large amount of water this defrosting method produces. Drain the drain pan during this process or sponge away the water.

Repairs

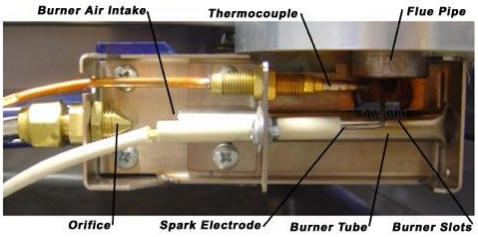
Cleaning the Burner

The burner tube is easily cleaned with compressed air. Air in a Can is another option that

works. **Caution: Some Air in a Can is flammable. Be sure burner flame is turned off and that the burner has cooled completely!**Simply blow air from the burner slots to the burner air intake. The burner tube has no parts inside, so be sure that the tube is unobstructed. A pipe cleaner can



be used to loosen dust and other debris from the burner tube. Once the burner is cleaned, the flame will be crisp and clean. (See picture above) If the flame has been burning dirty for any period of time, be sure to clean the flue and baffle.



Cleaning the Flue and Baffle

If soot build-up is present inside the flue

pipe, or if the flame was burning dirty then cleaning is required. Turn off the gas supply and let the flue pipe cool. Remove the baffle-

by unhooking the baffle wire from the top of the flue tube and pull up and out. To clean the baffle, take a wire brush and remove the soot.

To clean the flue, remove the baffle and place some aluminum foil over the burner to catch the debris. Then, take a flue brush and

brush the flue pipe. Be careful not to damage the burner tube.

Cleaning the Orifice

It is rare that debris will get around the filters and make it to the orifice. If the flame size is small, the thermostat and gas supply check out good, then it is possible the orifice needs to be cleaned. To remove the orifice, loosen the brass fitting to the left side of the orifice. Gently move this to the side. Do NOT kink gas line. Remove the brass nut that holds the orifice to the burner bracket. Clean the orifice by washing in rubbing alcohol or with high-pressure compressed air. **NEVER force ANY object into the orifice!** Changing the orifice hole by ANY amount will damage your refrigerator and void your warranty. When re-installing the orifice, be sure to line up the orifice so the gas will pass directly into the burner tube. Check for leaks at the gas supply line after reconnecting gas line. (See Leak Testing)

Transporting Refrigerator

Diamond refrigerators can be transported on their side. To transport, lay the refrigerator on the burner side. (left side facing refrigerator) The refrigerator will not require any additional set-up if transported this way. The refrigerator can also be transported standing, providing the refrigerator is properly strapped.

Warranty

Diamond refrigerators are covered by a five (5) year limited warranty. Five year warranty on the cooling unit. Three year warranty on parts and labor on refrigerator. All warranties are "carry in service". Please see original warranty card supplied within the refrigerator or contact your dealer.

Troubleshooting

Problem	Likely Cause	Solution
Refrigerator and/or Freezer are to warm	• Is the burner lit	If the burner is not lit, re-light and check operation. If the burner does not light, refer to "Burner will not Light"
	• Is it time to defrost	Defrost according to Owner's Manual
	• Is ventilation according to Owner's Manual	Make sure ventilation is according to Owner's Manual
	• Is the gas pressure correct	Have a qualified technician check your gas pressure. i.e. local propane company. The gas pressure should be 11" water column.
	• Is the ambient temperature extra warm	Limit door openings to absolute minimum
	• Are the condenser fins dirty	Clean the condenser fins (see page 8)
	• Are the absorber coils dirty	Clean the absorber coils (see page 8)
	• Do you smell ammonia	If there is an ammonia smell, the cooling unit is leaking and must be replaced
	•Check for frost on evaporator outlet tubing	Tip refrigerator forward to 10:00 position and hold it there for 5 seconds, or you can wait for 10 – 12 hours and refrigerator will quit by itself. (see note 1)
	• Is the refrigerator level	Level the refrigerator according to the Owner's Manual
Refrigerator compartment freezes my food	• Is the burner modulating? (flame goes from "high" to "low" flame while someone else turns thermostat knob from "MAX" to "MINIMUM")	If flame does not modulate, it may be possible that the thermostat is defective. Contact your local *Diamond* dealer for further information and replacement.
	• Refrigerator is located in an unheated area, or where the temperature is low	If the area where the refrigerator is below 50° F, you must either move the refrigerator to a heated area, or build a cover for the refrigerator.
	• Thermostat knob is at a cold setting	Turn thermostat knob counterclockwise to the warmest position, and then turn it clockwise to setting "2"

Note:

1. Frost on evaporator tube will only occur when refrigerator has not been running for a period of time, or upon initial start-up.(first time refrigerator is lit)

Troubleshooting

Problem	Likely Cause	Solution
Burner will not Light	•Ignitor will not spark	Reconnect ignitor wire.
		Inspect that the spark electrode tip is not further from burner slots than ⅛" (see picture on pg. 8)
	•Ignitor wire may be shorting out	Inspect the ignitor wire for frays and tears, and if torn or frayed, call your local *Diamond* dealer to get a replacement.
	• Is the peizo ignitor functioning	Operate the ignition more often when lighting. Push the button rapidly until the flame lights
Ignitor sparks, but burner will not light or stay lit.	• Thermocouple may be bad	If flame does not stay lit when you release the gas safety valve, replace the thermocouple.
	• Is the gas pressure correct	Have a qualified technician check your gas pressure. i.e. local propane company. The gas pressure should be 11" water column.

DIAMOND®
Propane Gas Refrigerators

Manufactured By
Miller Refrigeration LLC
7295 50th Ave.
Sears, MI49679

231-734-2500
866-825-4013

The Diamond logo is owned by Miller Refrigeration

Cooling Unit Diagram